



Remarks

Allowable claim 23 has been rewritten in independent form as claim 32, and presumably claim 32 is now allowable, as is claim 24 which has been amended to depend from claim 32.

Claim 27 is a combination of previous claims 1 and 2, with the exception that the features of "a detector for detecting when evolution of the hydrogen sulphide has reduced or ceased" and "a reservoir for storing a reducing agent or precursor thereof" have not been retained. In the Office Action, the Examiner commented that the prior art of record fails to teach or suggest the particular reagents as reducing agents in detecting hydrogen sulphide. Claim 27 recites these selective reducing agents, and it is believed that independent claim 27 (and all claims depended therefrom) are allowable. It is further noted that claim 28 reintroduces the feature of the reservoir for storing the reducing agent or precursor thereof, and claim 29 reintroduces the feature of a detector for detecting when evolution of the hydrogen sulfide has reduced or ceased.

Amended claim 1 recites an apparatus for measuring the reduced inorganic sulphur content of a sample. The apparatus comprises a reaction chamber, means for introducing a selective reducing agent that selectively reduces the reduced inorganic sulphur of a sample in the reaction chamber to hydrogen sulphide, and measuring means for measuring the amount of hydrogen sulphide evolved by reaction of the selective reducing agent with the sample, wherein the measuring means is selected from the group consisting of an IR spectrometer, a gas chromatograph a mass spectrometer, a turbidimetric analyser, a gravimetric analyser and an electrochemical gas analyser.

Swaim et al. describe an apparatus for measuring trace amounts of total inorganic sulphur in samples, particularly in samples containing from 0.5 ppm to 100 ppm sulphur (see column 1, lines 25-27 of Swaim et al.). Swaim et al. introduce a sample to be analysed into a reducing solution effective to reduce inorganic sulphur to H_2S and sweeping the volatile H_2S using an inert carrier gas to a plasma. In the plasma, the H_2S is atomised and excited by the plasma and the light emitted from the plasma is passed through a monochromator. A photomultiplier tube is used to detect the light at the wavelength passed by the monochromator, for example, 180.7 nm, or

182.0 nm or 182.6 nm. Swaim et al. describe the use of vacuum ultraviolet atomic emission spectrometry to measure the H₂S (see column 1, lines 54-65).

As amended, claim 1 now excludes UV spectrometry therefrom and accordingly the anticipation rejection based on Swaim et al. has been overcome. It is further submitted that the invention defined in claim 1 is not obvious in light of Swaim et al. In particular, the teachings of Swaim et al. are directed to analysing total inorganic sulphur that is present in trace amounts. The measurement means used in Swaim et al., including a plasma and a photomultiplier tube, is capable of measuring such trace amounts. However, the measurement means of Swaim et al. is not capable of measuring the evolved H₂S from samples that may be analysed by the apparatus defined in claim 1. As will be apparent from the present specification, the apparatus defined in claim 1 is intended to be used for analysing samples to enable the environmental impact of reduced inorganic sulphur in the samples to be determined. Such samples have reduced inorganic sulphur present at significantly higher levels than the trace levels of sulphur described by Swaim et al. Analysing such samples in the apparatus of Swaim et al. would "blind" the detector of Swaim et al. as the level of H₂S evolved would be above the detection maximum of the apparatus of Swaim et al. Thus, it is not possible to use the apparatus of Swaim et al. to analyse such samples.

With regard to amended claim 22, it is respectfully submitted that this claim is also not anticipated by, or obvious in view of, Swaim et al. Amended claim 22 defines a method of measuring the amount of reduced inorganic sulphur in a sample, the method including reacting a sample with a selective reducing agent that selectively converts the reduced inorganic sulphur in the sample to hydrogen sulphide but does not convert organic sulphur or sulphate material to hydrogen sulphide and measuring the hydrogen sulphide evolved. In contrast, the teachings of Swaim et al. are directed towards analysing samples to determine total inorganic sulphur. As explained in the paragraph bridging pages 1 and 2 of the present application, it is important for environmental management to be able to manage the amount of reduced inorganic sulphur in a wide range of materials as reduced inorganic sulphur can result in the formation of acid sulphate soil and acid mine drainage. It is apparent from the disclosure of Swaim et al. that there is no teaching, nor even suggestion, in the Swaim et al. patent that using a selective reducing agent that reduces reduced inorganic sulphur but does not convert organic sulphur or sulphate material is possible. Therefore, we believe that the Swaim

et al. patent contains no direction, nor even suggestion, that would direct the skilled person to modify the method of Swaim et al. to measure the reduced inorganic sulphur.

For at least the foregoing reasons, it is believed that the claims are properly allowable and an early action to that effect is earnestly solicited.

Respectfully submitted,

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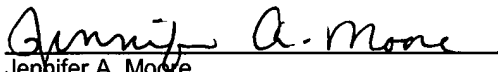
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